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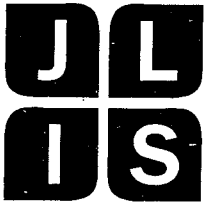

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Mapping of the Universe of Knowledge in Different Classification Schemes

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0 INTRODUCTION

Knowledge has been defined as the sum total of recorded ideas, facts, fiction, myths, experiences and expressed emotions conserved by the society. In simple words, what is known to the society and is held in its collective memory is knowledge. Knowledge is essentially public. Private knowledge is not knowledge per see. Tacit knowledge is formed with public knowledge. In other words the society is the conservator of knowledge. Three can not be any knowledge without a knower. The knowledge is knower, dependent. Man is the creator and consumer of knowledge. Knowledge is created to solve problems facing mankind and leads to new systems, products, services, values and ultimately the outlook.

1. CHARACTERISTICS OF KNOWLEDGE

All assorted chunks of knowledge can be unified into a single big whole. There is unity in knowledge says J. H. Shera(1903-1981). In other words, the entire body of knowledge is a system having its definite characteristics:

2.1 Knowledge is not independent, it is dependent upon the knower, the man. It is subjective, and resides in the mind.

2.2 It is conserved by human society. Thus it is social in character.

2.3 Knowledge is never complete. It is fragmentary. It is dynamic, multidimensional and changing. It changes with time and society.

2.4 Thus it is inexhaustible, i.e. never ending. In other words it is infinite.

2.5 Technology, social advancements and knowledge discovery are mutually dependent.

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2.6 Knowledge originates from the environment, both physical and social. Man is the knower. The Nature, including society, is the ultimate source of knowledge. Our sense organs are raw tools to perceive knowledge.

Information is generated when the knower interacts with the nature through the sense organs. Information thus gained is integrated with the previously conserved knowledge for its use and validation. Thus knowledge is socio-biological in nature. Society is the producer and consumer of knowledge, while knowledge is the prime mover of society. Thus society and knowledge are locked in mutual influence on one another. It is not possible to isolate the one way influence.

Knowledge grows as society grows; whereas society changes and develops progresses as new knowledge is generated. It is the society which decides which kind of knowledge it is going to have; in which direction and in how much quantity; and determines the value scales for the different categories of knowledge. Therefore thrust areas in research develop new knowledge will depend on the values and priorities of society.

2. IMPORTANCE OF KNOWLEDGE STUDIES FOR LIBRARIANS

Knowledge is both recorded and oral. (Tribal and illiterate societies still orally preserve their knowledge). Librarians deal only with recorded knowledge i.e. documents. Knowledge is stock in trade of the librarians and information professionals. Therefore, quite obviously the study of the knowledge, its characteristics and structure is important to we librarians. Study of the nature of knowledge is as important to the library and information professionals as is the study of anatomy important to a surgeons says Jesse Shera(1903-1981). Hence as librarians we need to know the sources, nature and structure of knowledge. Only then we will be able to collect, organize and disseminate it effectively.

3. MODES OF GROWTH OF KNOWLEDGE

Knowledge is growing constantly. New subjects are emerging. S.R. Ranganathan(1892-1972) identified many modes of growth of subjects of various kinds. These are:

A By Specialization

A1 By denudation (Vertical Division)

A2 By dissection(Horizontal Div.)

A3 By lamination

B Interdisciplinary mode

B1 By Loose assemblage (Ad hoc Combination)

B2 By fusion(Permanent Combination)

C Multidisciplinary

C1 By Distillation (Management Sciences)

C2 By Agglomeration (Social Sciences)

C3 By Subject bundles(Antarctica expedition0

The modes of formation of subject cast a considerable influence on the structure of the subject. Explanation of these modes of formation of subjects is beyond the scope of this paper.

4. MAPPING OF THE UNIVERSE OF KNOWLEDGE

As said earlier Knowledge is ever growing, changing, and ever new. New subjects constantly emerge, old subjects change their status and structure and boundaries. There is no universal pattern of all knowledge that could be all things to all users. Hierarchy is only one pattern of structure. Therefore individual subjects change their structure; and relationships between subjects are seen in different ways. The prevailing philosophy, material culture, economic and technological needs, cosmic vision, sense of history and values held by the society influence the status and structure of the stock of knowledge in its possession. Every age and society has a distinct view of knowledge. For example, in the middle ages theology was considered the queen of sciences and other subjects were valued according to their capacity to serve her. Natural sciences considered as an idle man's task were not valued much then. Even during the times of Melvil Dewey (1851-1931) in late 19th century, philosophy and theology occupied a very respectable position. It is evident from the fact that 1/5th of space in the Dewey's universe of knowledge was occupied jointly by these two classes. Today the scales are tilted towards the study of natural sciences and their economic and technical implications. Sciences rule the roost and have been given the status of a national religion in some secular countries. Empirical and experimental modes of investigation are considered reliable methods to discover new knowledge and solve problems. These days authority, faith and intuition as sources of knowledge are looked upon with suspicion. Thus the status a subject commands in a society is never constant. Some subjects once important and at the centre stage of knowledge are now relegated to a peripheral positional. Once it was industrial production which was important. Today the environmental studies management, biotechnology and research on non-conventional sources of energy are gaining, importance. In the information society, resource, human/animal rights, management ITC Biotechnology, environment are pervasive.

41 CLASSIFICATIONS ARE IMPERMANENT

As said earlier, with the emergence of new knowledge the status and position of existing subjects undergo a change. Equation amongst subjects are always in a flux. For example, many subjects such as public health, international law, geopolitics, demography which had status of compound or complex subjects in the 6th (1960) edition of the Colon Classification gained the status of a basic subject in the 7th edition (1987) of the scheme. Many similar examples can be given from the DDC. Thus knowledge structure is always changing. Classification essentially represents knowledge, and is its map. It is a tool to analysis, organize and represent knowledge. Therefore, as the knowledge advances by filling gaps we need new classifications, or adjust and modify the earlier ones. We have not only to revise classifications, but have to invent new classificatory techniques to organize new knowledge. S.R. Ranganathan commended the DDC as the best classification for the 19th century literature. At the same time he thought it quite unsuitable to classify 20th century knowledge especially of the post world wars period. Thus 20th century needed new classification system and techniques and the a 21st century may well need new classification particularly for organizing the Internet. Regarding the structure of knowledge we need to limit ourselves to one epoch within one culture to find some firm basis for a unified knowledge.

42 PRINCIPLES FOR MAPPING THE UNIVERSE OF KNOWLEDGE

D.W. Langridge (1925-2001), a well known English librarian, identifies four principles for mapping of the universe of knowledge. These , however are not mutually exclusive.

Ideological Principle: These are based on some schools of thought, or some ideologically held principles. Earlier examples are Christian schemes of the middle ages. Latest example is the Russian classification system BBK which had made Marxism-Leninism as the center of the universe of knowledge. To some extent every scheme is based on some ideology. No classification scheme can be value free or independent of the time and culture of its origin. Every scheme is biased towards the values and culture of the society of its origin. That is why the Dewey Decimal Classification has to be modified and adapted to classify African and Asian subjects.

Principle of Social Purpose: Vedic system (1500BC) the division of knowledge into categories of Dharm (Normative principles), Arth (social sciences) Kam (Pure sciences and arts) and Moksh (spiritual knowledge) is an example of this principle. This is a broad classification which arranges

knowledge in an order of decreasing current social utility and in the increasing potential for future use. This is a theoretical classification which has never been the basis of a library classification or any detailed knowledge classification. Ranganathan was bit influenced by it but he never used it as the basis of his Colon Classification.

423 ***Scientific Order:*** It is an order based on some natural and logical order of subjects. Its principles were first crystallized by E.C. Richardson in his famous book, Classification: Theoretical and Practical (1901). C A Cutter (1837-1903) used the evolutionary order of main classes in his Expansive Classification (1893). Cutter was of the opinion that nature has an order which should be reflected in knowledge organization. His system is based upon the assumption, "Order of sciences is the order of things, and order of things is the order of their complexity". This is obviously under the influence of the theory of origin of species as given by the Naturalist Charles Darwin (1809-1882). Entities in nature have evolved from atomic to molecular, and to molar forms. In the modern terms it is known as theory of integrative levels prorogated by J E L Ferradane and D. J Foskett. These principles were used to some extent by J D Brown (1862-1914) in his Subject Classification (1906) and H E Bliss (1870-1955) in his Bibliographic Classification (1935). The arrangement of classes in the Library of Congress Classification is also based on this principle. The arrangement of classes in botany and zoology in the DDC and CC is predominantly taxonomic. But its full implications were explored by the Classification Research Group (CRG) London (established in 1955) when the Group attempted to solve the problems of general classification schemes and tiered to design a new system of library classification. The vague evolutionary order was more deeply explored and precisely defined in the theory of Integrative Levels by J E.L Ferradane (1906-1989) and later propagated by D J Foskett The objective of this theory was to "identify all the entities or objects of knowledge in existence, and to order them by means of a theory and thus provide a structure of knowledge". Obviously this theory applies mostly to natural objects which have physically evolved. It is also applicable to social entitles which obviously are always in a state of slow social evolution.

424 ***Principle of Arrangement by Disciplines:*** A discipline is a major and cohesive chunk of knowledge formed by a single mode, or have the similar objects of study. Major contribution of Melvil Dewey (1851-1931) was to divide knowledge by discipline. The DDC defines a discipline as "An organized field of study or branch of learning dealing with specific kinds of

subjects and/or subjects considered from specific points of view". Disciplines differentiate knowledge into number of logically distinct domains characterized by the possession of cohesive types of concepts, structure and method of creation and verification of new knowledge. The division by discipline offers comparatively hope for better solution to the problems of information retrieval and to meet the needs of library users. First exposition of this method is from the Advancement of Learning (1605) by famous English philosopher, man of letters, and scientist Francis Bacon (1561-1626). He deeply examined the then prevailing state of knowledge and means of its progress. He suggested that there are three kinds (major disciplines) of knowledge based upon three faculties of mind, namely Memory, Imagination and Reason. This produces correspondingly three major disciplines: History, Arts, and Sciences. However, it is debatable whether these disciplines are autonomous, mutually exclusive and fuse to make an integrated whole of knowledge. Anyhow, the present age is the age of division by discipline in unison with the trends pursued by scholars and reflected by the university academic organization.

5. MAPPING THE UNIVERSE OF KNOWLEDGE IN SOME GENERAL LIBRARY CLASSIFICATIONS

Now let us see how the universe of knowledge has been represented in some general library classifications. The classifications outline and represent the universe of knowledge in their own way following different principles:

51 IN THE DDC/UDC

Melvil Dewey based his classes on the inverted Baconian order formulated by his contemporary Hegelian philosopher W T Harris (1835-1909). Its first division is by discipline and it was the first library classification to do so. Division by discipline implies that one class can collocate all aspects of a subject. Subjects/topics are scattered by discipline. The three great divisions, produced by three faculties of the mind, are:

Main Classes	Disciplines	Faculty
100-600	Sciences	Reason
700-800	Arts&Literature	Imagination
900	History	Memory

In fact there are ten main classis 1-9 preceded by the Generalia Class 0. These ten main classes reflect the educational consensus of the late nineteenth century Western world. The DDC main classes are disciplines divided into sub disciplines

which in turn are subdivided into subjects and their further aspects. A discipline provides a context for a subject.

52 RIGIDITY/ARTIFICIALLY OF THE DECIMAL NOTATION

The DDC has been rightly criticized for its rigidity of division by ten at every step of its division. Major and convincing argument put forth by its critics is that knowledge does not proliferate into patterns of ten at every stage of its development. Growth of knowledge is not conditioned by decimal or metric system. It is an artificial and rigid mould. It happened because Dewey chose his notation first and classes were formulated later. Notation became the master to dictate its own convenience.

But the decimal fraction has a great advantage for hospitality in chain. Hierarchically the DDC subdivisions can be carried to any level by addition of a digit to the right. At each level the specificity/intension of the subject increases:

000/999	Universe of knowledge
300	Social Sciences
330	Economics
332	Financial economics
332.4	Money
332.42	Monetary standards
332.422	Monometallic
332.4222	Gold Coins
332.422209	Hallmark future-History

Hierarchy is the hallmark feature of the DDC. It was obtained by default as result of the decimal notation. However, the order in main class array is not without glaring faults: Religion (Theology), which is based upon faith, has been included in the faculty of Reason. Languages (400) has been separated from Literature (800). History (930/990) has been separated from social sciences. Many more such irregularities can be mentioned at lower levels of Divisions and Sections. Dewey was of the opinion that the order of classis did not matter much as long as every class was given some knowledge place in the system. He provided a powerful index for this purpose.

The DDC, true to the times (19th century) and country of its origin (USA), is a practical scheme. To explore its theoretical or philosophical base is an unprofitable exercise, if not a futility. Dewey's concern was to devise a scheme which mechanizes a shelf order and provides an appropriate place for the

incoming new subjects without disturbing the established order. Dewey's contribution lies only in solving a practical problem of hospitality. He neatly did that and successfully achieved that with his decimal fraction notation which is a major invention.

53 CUTTER'S EXPANSIVE CLASSIFICATION

Expansive Classification (1891-1893) by C A Cutter (1831-1903) is important for arrangement of its main classes in an evolutionary order based upon the evolution of knowledge. He was of the opinion that book classification based on knowledge classification has a permanent value. He used alphabets to denote classes to escape the rigidity of decimal notation. His broader classes are:

A	Generalia works	M/Q	Biosciences, Medicine
B/D	Philosophy and Religion		
E/G	History and Geography	R/V	Useful arts, Technology, War, Athletics.
H/K	Social Sciences	W	Fine Arts
L	Sciences and Arts	X/Y	Language and Literature
		Z	Book Art

Cutter himself explains: The Expansive classification follows the evolutionary order throughout. In natural history it puts the parts of each subject in the order which theory assigns to their appearance in creation. Its science proceeds from atomic to the molecular and then to the molar, from number to space, from matter and force, and then to matter and life. Its botany goes up from cryptograms to phenerograms. The book art follows the history of the book from its production, through its distribution, to its storage and use in libraries and ends with their description that is bibliography. Economics too has a natural order: population → production → distribution → property → consumption....". They have practical value since they bring together books which one may wish to use at the same time". Cutter's classification is dead now, but its influence has been considerable especially on the Library of Congress Classification. It was the first library classification based on some definite and objectively expressed principles. It was the first classification which wanted a library classification to be more than just shelf arrangement.

54 SUBJECT CLASSIFICATION OF J.D. BROWN

James Duff Brown (1862-1914) was a star librarian famous for introducing open access in libraries of England. His Subject Classification was first published in 1906 and revised in 1917 and 1939. Its main class order is interesting, as

arrangement of subjects was different from that of the DDC and Expansive Classification. He claimed his main class order was in "Scientific progression". He was of the opinion that order of creation in nature is:

Matter - Force - Life - Mind - Record

Accordingly the sequence of his main classis is:

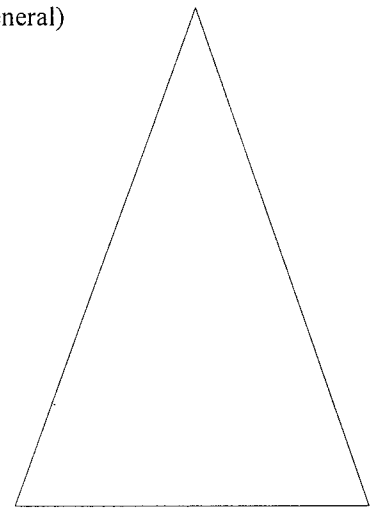
A	**Generalia**	**Mind**	
	Matter and force	J-K	Philosophy and religion
		L	Social and Political Science
B-D	Physical Sciences		
	Life		**Record**
E-F	Biological Sciences	M-N	Language and Literature
G-H	Ethnology Medicine	O-W	History and Geography
I	Economic biology	X	Bibliography

Brown is famous for his "one-place theory", which is to collocate a subject and its aspects at one place rather than to scatter them by discipline as done in the DDC and other systems. With the concrete subject as the basis its abstract aspects are placed around it. Let us take different aspects of the subject Copper: Metallurgy, Mineralogy, Chemistry, Conductivity, Economics. The S C places all these aspects together with Copper, that is why it is called one- place theory. The concrete subject (Copper) is placed in a science to which it belongs most near. In this case it is mineralogy. Similarly, Apple is placed under Botany. Practice follows theory: Chemical technology is placed under Chemistry. But this one-place theory produces very funny and embarrassing results: Body exercises and body funeral come at one place in this system. Though the sequence of main classis is in perfect evolutionary order, but one place theory failed to give logical sequence. It was a bold attempt to experiment with an alternative to division by discipline. The experiment failed. But the lessons from Brown survive.

55 COLON CLASSIFICATION

Colon Classification (Ist ed. 1933) by S R Ranganathan (1892-1972) is a thoroughly faceted and theory based classification. Ranganathan was very particular about the order of main classes and of facets in a class number. For him the order is the essence of classification. He formulated some postulates and principles for order of classes in arrays and chains, and facets in the facet formula. Contrary to expectation the order of main classis in the C C is not Vedic, though a weak influence of this system can be seen.His broader main class order is:

Science A/M		Mysticism & Spiritual Experience	Humanities N/S	
A	Sciences (General)		N	Fine arts
B	Mathematics		O	Literature
C	Physics		P	Linguistics
D	Engineering		Q	Religion
E	Chemistry		R	Philosophy
F	Technology		S	Psychology
G	Biology		T	Education
H	Geology		U	Geography
I	Botany		V	History
J	Agriculture		W	Political Science
K	Zoology		X	Economics
L	Medicine		Y	Sociology
M	Useful arts		Z	Law



These can be represented by a triangle as given on the opposite page.

Ranganathan was of the considered view that Sciences have evolved first followed by humanities; social sciences are the last to come into being. Keeping in view the social and academic trends Ranganathan devoted half of the total main classes to science and technology. The other side of the triangle has been divided between humanities and social sciences. Sciences A to M are in the order of their increasing concreteness. B mathematics is most abstract of the sciences; C physics is more concrete than B mathematics and less concrete than D Engineering and so on. M useful arts having classes such as Textile Engineering, Carpentry, Smithy, Games and sports is the most concrete of the sciences, Within sciences Ranganathan follows the serial system i.e. principle of theory and practices alternating one another - as first given by August Comte (1798-1857). For example, B mathematics has many applications in C Physics which in turn Technology follows E Chemistry; and J Agriculture follows I Botany. In this way theory and its applications have been brought together, which have been separated in the DDC. The Humanities N/S have been arranged in the order of their increasing richness of contents. Social sciences T/Z have been arranged in the order of their increasing artificiality: Z Law is the most artificial of all the social sciences. Main class Δ delta Mysticism and Spiritual Experience at the vertex of the triangle has been given top position in the mapping of knowledge. It is at the cross roads of sciences and humanities. Ranganathan was of the opinion that Mystic and Spiritual knowledge is the source of all kind of knowledge. It is

sum and summary of the entire empirical knowledge. Spirituality in India is regarded as highest knowledge of God and self- *sarve vidya pratishtha*. Hence its highest position. In addition to his well thought out main class order the sequence of categories PMEST is in the order of decreasing concreteness while their connecting symbols are given ordinal values in a way that order of subjects on the shelves is from abstract to concrete or general to specific. This is called the Principle of Inversion. Rounds and levels of facets in the facet formula are arranged by the Principles of Facet sequence such as Wall-Picture principles, Cow-Calf Principle etc. His principles of facet sequence and principles of Helpful sequence in an array have also been used by other classification systems.

56 THE LIBRARY OF CONGRESS CLASSIFICATION

Started in 1898 and first LCC schedule came out in 1902.Class Z was chosen the first schedule to be developed. Form the beginning, individual classes were developed by different groups of specialists under the direction of JCM Hanson and Charles Martel. There are 21 classes in 40+ schedules used by many US and foreign libraries. Cutter's Expansive Classification was the main guide to develop classes, with which it resembles in broad divisions.

It is a classification by discipline. It was not universal but literary warrant schedules were developed from the collection of L C Main classes were developed into sub classes denoted by two digits and are progressive from general to specific. Tailored to local needs of world's biggest library the order of classes is even influenced by its building. It is a triumph of pragmatism.

			Science & Technology
A	General works	Q	Science
Social Sciences			
B	Phil. Psy, Religion	R	Medicine
C	Hist. and Geog.	C	Agriculture
H/L	Social Sciences	T	Technology
Humanities			
M/N	Music and Fine arts	U	Military Sci.
P	Lang and Lit.	V	Navy
		Z	Bib. Bibliography and Library Sci.

General works lead the scheme. It is followed by classes Philosophy and religions which sets about theories about human beings in relations to God. C/G cover concepts such as human abode and their means of living, and transition of mind from primitive to advance culture. Related aspects H/ Z are social ,

economic and political. M/P concern human aesthetics and intellectual development. Q/V are understanding nature and making progress.

57 THE BIBLIOGRAPHIC CLASSIFICATION

Henry Evelyn Bliss (1870-1955) spent most part of his life in the study of the foundations of library classification. In Bibliographic Classification (BC, 1940-1953) the order of main classes is based on Scientific and Educational Consensus. He was of the view that there is an order of main classes that exists in nature and it is nearer to the majority consensus. The order given by him is:

A	Philosophy	K	Social Sciences
AM	Mathematics	L/O	History
B	Physics	P	Religion(Alternative is Z)
C	Chemistry	Q	Social Welfare
D	Astronomy	R	Political Sciences
E/G	Biology	S	Law
H	Anthropology	T	Economics
I	Psychology	U	Technology
J	Education	V	Fine arts
K	Social Science	W/Y	Language and Literature
L/O	History	Z	Religion (Alternative is P)
P	Religion (Alt)		

In addition he also used the principle of collocation and subordination to bring together closely allied subjects. For example, sciences and their applied aspects have been placed side by side. He also offered alternative locations for some subjects. For example, economic history could either be placed with economics or general history. Such alternative locations are numerous. On the other hand his theory of consensus has come under criticism . It is argued that there is no permanent order of main classes in nature, therefore it cannot be known. Moreover, this order changes from time to time as new multidisciplinary subjects are formed. Emergence of a new main class changes the status of other classes. His provision of alternative locations also goes against any permanent order of main classes in nature. Nevertheless, it is conceded that the order of main classes in the BC is logical and more stable, perhaps bit better than rival systems.

58 RIDER'S INTERNATIONAL CLASSIFICATION

Another general scheme "International Classification" is of Fremont A Rider (1885-1962), an American librarian, famous for his advocacy of microforms in libraries. In 1961 he self-published his international classification "for arrangement of books on the shelves of general libraries." His scheme, a very broad, one has 26 main classes denoted by Roman capitals.

A	Generalia
B	Philosophy and Psychology
C/I	History and Geography
J/N	Social Sciences
O	Business & Industry
P	Military Science
Q/S	Physical sciences and Technology
T/V	Biology/Medicine/Agriculture
W	Fine arts / Music
X/Z	Language and Literature

The classes have been further divided alphabetically up to three letters, thus producing a total of (26x26x26) 17576 class numbers. Rider also announced that, being broader, his scheme will not be revised - indeed, broader a scheme less revision it needs.

It can be described as a still born system, never used anywhere and even forgotten by the textbook writers. It did not sync with the times being primitively enumerative scheme born amidst faceted systems and a broader one in times of turbulently growing knowledge needing depth classification. The broader arrangement is social sciences, science and technology and humanities lastly. The author does not seem to have cared for any order of classes

59 BIBLIOTHECAL BIBLIOGRAPHICAL CLASSIFICATION

The Bibliothecal Bibliographic Klassification (BBK), also abbreviated as LBC, was designed at and for the erstwhile Lenin State Library Moscow. Published in 30 volumes between 1960-1968 its abridgements in 6 volume (1970-75) and one volume (1976) are also available for medium and small libraries respectively. Versions are also made out for types of documents such as printed books, electronic documents, or OPACs. Its 21 main classes are denoted by 28 capital Cyrillic alphabets. Since 1977 all versions provide alternative 1/9 decimal numbers. A brief outline of main classes looks like this:

1	General and interdisciplinary knowledge
2	Sciences (physical and Bio)
3	Technology
4	Agriculture and Forestry
5	Public health and Medicine
6	Social sciences and Military art

7 Culture and Education

80/84 Language and Literature

85 Art

86 Religion and Atheism

Main tables are supplemented by two UDC-like tables of special and many common (including geographical) subdivisions. The system is hierarchical and faceted to some extent.

As clear, natural sciences and technology head the list as could be expected from an atheist regime. These are followed by social sciences and humanities. Technology, agriculture and medicine are aptly sandwiched between natural and social sciences. These are the bridge between science and societal needs. In between their further hierarchical subdivisions an estimated total of 45,000 classes, are arranged in succession of their pedagogical order. As said earlier, their first place in every class is given to Marxism – Leninism. Broadly it can be seen that the disciplines are arranged in the decreasing order of their social utility as perceived in a socialist country. The sciences more from basic to applied; abstract to concrete; whereas social sciences move from quantity to quality. Fate of this system in a capitalist democratic and liberated Russia is not known - though libraries are always betray heavy inertia to replace a classification system once adopted.

591 BROAD SYSTEM OF ORDERING (BSO)

It is a unique system in the sense that it was not designed as a conventional classification for use in libraries or classifying knowledge per se. Commissioned by Unesco in 1971 as a roof classification for S & T (an umbrella classification), it was elaborated for FID by Eric J Coates, G Lloyd and D. Simandi as a switching language to facilitate a broader level interoperability of various indexing languages, library classifications, retrieval systems, information bodies and organizations. The aim was to make them mutually compatible on a very general level. As its another unique feature, it is the first originally designed post-1945 classification harnessing the modern developments in classification ushered in by SR Ranganathan and later by CRG and others.

Its first versions (1971) had only 4000 classes elaborated to 6800 in the 3rd and latest version, available only in electronic form. It includes traditional disciplines, multi disciplinary and mission oriented subjects which can be expanded vertically and horizontally employing centesimal and millesimal fractions. Knowledge in BSO has been presented as a clockwise cyclic structure starting with application subjects such as 112 Logic, Mathematics Research

methods, etc. starting at the left bottom of the circle going to K 992 Esoteric practices at the right bottom .340 Life sciences,480 Sports science on left side of the arc while 500 Humanities and social sciences, and 600 Technology on the right arc are high points on the circle.

112-188	-	Applied subjects, Logic, Math, Research Methodology
200-340	-	Physical & Bio sciences
359-420	-	Applications of life sciences
410-480	-	Agriculture, Environment, Medicine
palpha445-480	-	Behaviour sciences, Education, Human Needs & Sports
500-588	-	Social studies
600-890	-	Technologies
910	-	Language & Literature
940	-	Arts
970	-	Religions
992	-	Esoteric practices

Compound subjects can be formed by facet synthesis with centesimal and millesimal notation introduced by a comma. The complex classes are formed with a hyphen, e.g.

Information services in religion
970-140

Research in religion
970-182

It is striking that application subjects proceed the disciplines which have been arranged in the order: sciences, their applications Education, Human needs Social sciences proceed technology, art and religion as social sciences may determine directions for them. Esoteric practices which have least factual and verifiable knowledge having been placed at the end. It endows it with one of the most thoughtful order of knowledge in a documentary classification.

6. SUMMARY

Knowledge is sum total of what the mankind knows and is stored up in its collective memory devices. Knowledge is dynamic, changing, ever incomplete and infinite. Knowledge depends upon the knower, the man. It is social in character, so its structure changes from society to society and from age to age. Study of its nature, structure and characteristics is as important to library and information professionals as is the study of anatomy to a surgeon. Classifications represent knowledge and determine position and status of its various branches.

Since knowledge is changing so classification also change and present a different structure of knowledge depending upon the society and time of their designing. No classification is neutral or permanent. All classifications present a biased or value loaded structure of knowledge. The arrangement of main classes can be done in four ways:

a) Ideological Principle
b) Social Purpose Principle
c) Scientific Order
d) Division by Discipline

These principles are not mutually exclusive. Knowledge has been mapped differently in different classification systems as perceived by their designers living in different societies and times. Dewey followed the inverted Baconian order of the main classes produced by the three faculties of the mind, namely, Memory, Imagination and Reason. Major division is by discipline. It is a nineteenth century system which is further mould by the decimal notation. Division by ten at every step is artificial and rigid. Natural growth of knowledge knows no such constraints. However, the hierarchy depicts only one dimension of the class, but provides virtually infinite hospitality. C A Cutter followed evolutionary and scientific order in main classes in his Expansive. Classification (1891-1893). Its science proceed from molecular to molar and mathematics from number to space. Subject Classification (1906) by James Duff Brown has a very interesting order of matter, force, life, mind, record. The main classes are arranged in the cosmic and social evolutionary order. By way of experiment, Brown discarded the traditional approach of division by discipline. He applied one-place theory. He chose a concrete subject, say, Iron or Apple and brought together all its abstract aspects at one place. For example Chemistry, mineralogy, alloys, technology, archeology; folklore of iron will be brought together at one place in the schedules. Other systems such as the DDC, LCC,BC and the CC scatter such aspects by discipline. But this one place theory did not yield good results to serve users needs. S R Ranganathan in his Colon Classification (1933+) uses alphabets to denote main classes and made fool proof provisions for insertion of new main classes at proper places. In the 7th edition the number of basic subjects has grown to more than 750. He devotes half the places A/M to sciences which are arranged in the order of increasing concreteness. Humanities N/S are arranged in the order of increasing richness of contents; while social sciences T/Z are arranged in the order of increasing artificiality. Δ (Delta) Mysticism and spiritual experience is at the apex symbolizing the sum and summary and source of all knowledge. He also used crystallized Principles of Helpful sequence for further arrangement within a main classes and for over all

shelf order. H E Bliss for his *Bibliographic Classification* (1940-1953) based main classes on, what he called, Scientific and Educational Consensus. He also gave the option of alternative locations for some of the main classes. Such an order of main classes is considered more durable. However, some philosophers rightly argue that there is no such permanent order of classes in nature to be whatever be, the order of main classes in B C has many merits. The BBK is inevitably biased towards the heavily loaded theories of now defunct Marxism-Leninism. The BSO delineates the best and thoughtful order ,yet ironically it is not used for this purpose In nutshell there can be no universally acceptable map of knowledge. Such maps are only perceived, biased and change with time and place. Knowledge changes, so does its map and mapping.

Key Words:

Discipline: A major Cohesive area of knowledge based upon a particular research methodology or having common similar objects of studies.

Educational and Scientific Consensus: H E Bliss tried to discover an order of main classes based upon the consensus of educationists and scientists. He used such an order in his system of Bibliographic Classification.

Evolutionary Order: Order of classes in the natural, chronological sequence of their origin. This order is taxonomic and cosmic

Knowledge: Sum total of ideas, facts, fiction, myths, experiences conserved by the human society. What is known to the society and is held in its collective memory may be called knowledge. Knowledge is what I know , whereas information as what we known.

Main Class: First order array of the divisions of the universe of knowledge. Number of main classes and their order varies from classification to classification. Main classes make the broader map of knowledge.

One Place Theory: To collocate all the abstract aspect of a concrete subject around it. Given by James Duff Brown it is an alternative approach to division by discipline. But it did not work well in mapping knowledge and shelf arrangement of books.

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